



## Crayfish Corps Resource Brief—2017

### 2009-2017 Status & Trends

The rusty crayfish (*Orconectes rusticus*) is an invasive species that is native to the Ohio River Valley, which includes the states of Ohio, Indiana, and Kentucky. In 2008, the rusty crayfish was documented in Valley Forge National Historical Park. This posed a threat to our native crayfish species because the rusty crayfish is a bigger, more aggressive species that can outcompete native species for food and shelter. In response, staff established the volunteer Crayfish Corps to suppress the invasion of rusty crayfish in Valley Creek.

Groups such as AmeriCorps, scout troops, school groups, community organizations, corporate groups, families, and individual volunteers enter the creek with park staff from May to September to help capture and remove rusty crayfish.

Over the past nine years, our volunteers have removed a total of **25,327** rusty crayfish from the creek. Another **60,787** native crayfish have been documented and returned.



Figure 1. A rusty crayfish captured by a Crayfish Corps volunteer.

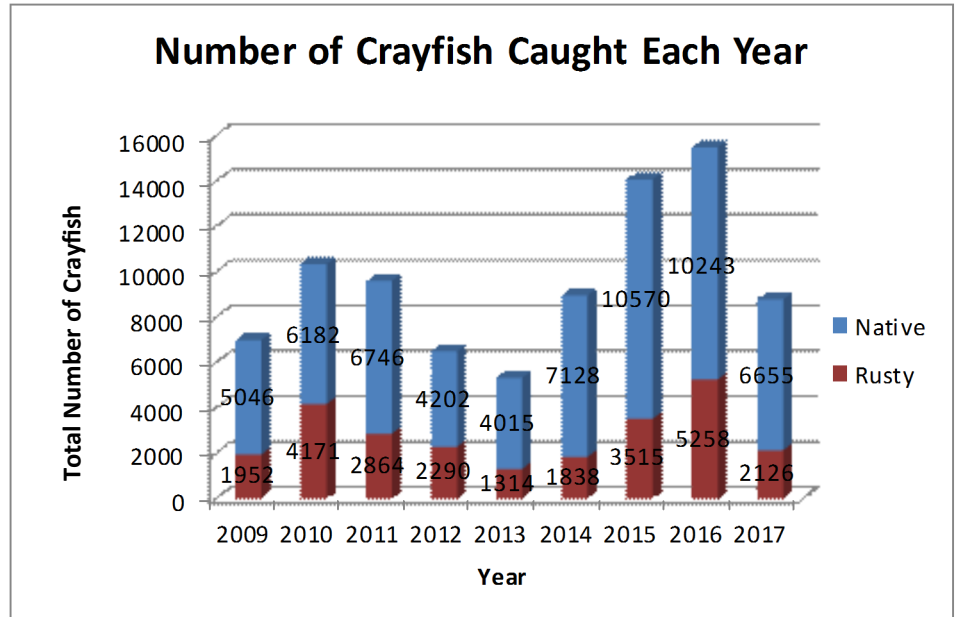


Figure 2. Number of native and rusty crayfish captured each year.

2016, marked the highest number of crayfish captured in a single season with a total of **15,501** crayfish captured, with almost double the number of natives captured compared to rustys. In 2017, the number of rusty and native crayfish caught declined by almost half (Fig. 2). This drop in captures is likely attributed to a decline in hours spent crayfishing, with about **1827 hours** spent crayfishing in both 2015 and 2016 and **1265 hours** in 2017. To account for the variability of hours spent crayfishing, we look at the number of crayfish captured per hour spent crayfishing to better evaluate the effectiveness of the program (Fig. 3). When the variability of hours crayfishing is controlled, we found that since 2014, we average about 5 native

### Objectives of the Crayfish Corps

1. Suppress the rusty crayfish, maintaining a 5:1 ratio of native to rusty crayfish (80% native, 20% rusty)
2. Create a meaningful and valuable volunteer opportunity

crayfish per hour spent crayfishing. From 2016 to 2017, we see a drop in the average number of rustys captured per hour spent crayfishing, going from close to 3 to about 1.5, respectively. This indicates a decline in the number of rustys in the stream but a relatively stable number of native crayfish.

Since eradication is not possible, the goal of Crayfish Corps is to suppress the invasion and keep the rusty crayfish population at a manageable

# Crayfish Corps Resource Brief—2017

## 2009-2017 Status & Trends Continued

level. Specifically, the park hopes to maintain at least 80% native crayfish and no more than 20% rusty crayfish in Valley Creek upstream from the dam along 252. Figure 4 shows the ratios of native to rusty crayfish by year, excluding section 1, and almost every year, the Crayfish Corps has met the 5:1 ratio goal.

To help evaluate success, Valley Creek was divided into four sections (Fig 5). These sections are defined by physical barriers (dams and bridges) as well as varying stream conditions.

Section 1 consistently fails the 20% rusty goal. This is because the rusty crayfish are able to freely migrate from the Schuylkill River—where the species is well established—into Valley Creek. Staff suspect the dam on Valley Creek at the end of Section 1 slows movement upstream, as statically significant differences in rusty crayfish captures have been found above

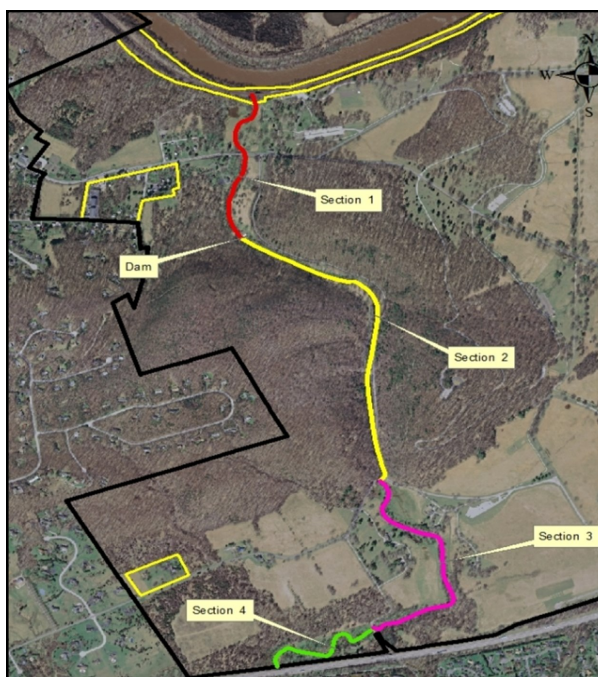


Figure 5. The four sections of Valley Creek, including the dam location.

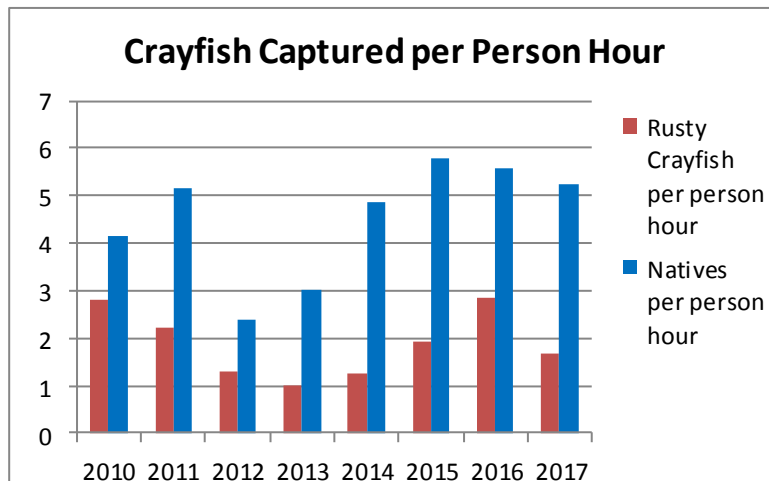


Figure 3. Average number of Native and Rusty Crayfish captured per hour spent crayfishing

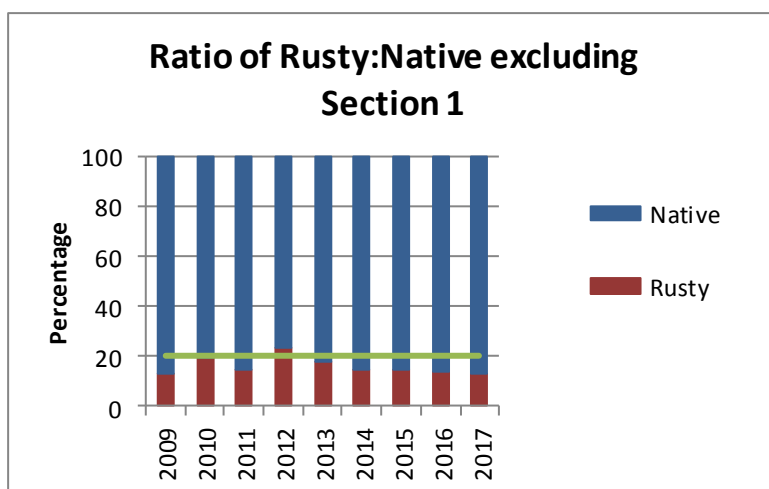


Figure 4. Percentages of Native Crayfish to Rusty Crayfish. The goal for Rusty Crayfish in Valley Creek is 20% shown by the green goal line.

and below the dam. This success is entirely due to the hard work of the Crayfish Corps who work to manage the invasion. Crayfish Corps will start up again in the spring of 2018. Please visit the park website to join !

### 2017 Fast Facts

#### Total Number of Rusty Crayfish removed

In 2017: 2,126  
Since 2009: 25,327

#### Total Number of Native Crayfish documented

In 2017: 6,655  
Since 2009: 60,787